

REMARKS

Reconsideration is requested.

Claims 1, 4, 5, 7-10 and 12-31 are pending.

Claim 1 has been amended to advance prosecution without prejudice. Support for the amendment may be found throughout the specification, including the experimental evaluation of the specification, as further detailed below. No new matter has been added.

To the extent not obviated by the above amendments, the Section 112, first paragraph "written description", rejection of claims 1, 4, 5, 7-10 and 12-31 is traversed. Reconsideration and withdrawal of the rejection are requested in view of the following.

The applicants amended claim 1 in the Amendment of June 25, 2007 to require the ratio of the aromatic dicarboxylic acid having a metal sulfonate group contained in the polybasic carboxylic acid ingredient to be in the range of 0.5 mol % to 4 mol % (inclusive), as opposed to the previously recited ratio of 0.5 mol % to 8 mol %. The claims have been further amended above without prejudice, to specifically refer to sodium 5-sulfoisophthalate.

The applicants have received seven (7) substantive Office Actions over a span of over two (2) years and there has not been a previous rejection that the specification allegedly failed to describe compositions containing aromatic dicarboxylic acids having a metal sulfonate group contained in the polybasic carboxylic acid ingredient generally and/or in an amount of 0.5 mol% to 8 mol%.

The specification generally teaches the following in the paragraphs spanning pages 27-28 of the specification:

The aromatic dicarboxylic acid having the metal sulfonate ink is contained in the polybasic carboxylic acid ingredient by, preferably, 0.5 mol% to 8 mol% and, more preferably, 2.5 mol% to 7 mol%.

In a case where the ratio of the aromatic dicarboxylic acid having the metal sulfonate group contained in the polybasic carboxylic acid ingredient is less than 0.5 mol%, no sufficient dispersion stability to water can be obtained. In a case where it exceeds 8 mol%, the polyester resin is water solubilized and particle dispersion body in which the polyester resin is dispersed in the aqueous solution can not be obtained. Accordingly, it is defined as 0.5 mol% to 8 mol%.

The specification further describes the following with regard to specific examples of metal sulfonate groups:

Specific examples of the aromatic dicarboxylic acid having the metal sulfonate group contained in the polybasic carboxylic acid ingredient can include, for example, metal salts of 5-sulfoisophthalic acid, sulfoterephthalic acid, 4-sulfophthalic acid or 4-sulfonaphthalene-2,7-dicarboxylic acid but the aromatic dicarboxylic acid having the metal sulfonate group is not restricted only thereto. The metal salt can include salts of lithium (Li), sodium (Na), potassium (K), magnesium (Mg) or calcium (Ca). Among them, salt of sodium (Na) is used preferably. Among the aromatic dicarboxylic acids having the metal sulfonate group, use of the metal salt of 5-sulfoisophthalic acid is preferred and use of 5-sodium sulfoisophthalate is particularly preferred.

The specification further exemplifies, compositions wherein the preferred metal salt of 5-sulfoisophthalic acid is demonstrated in amounts of 4 mol % (PES1 and PES7 in Table 1 and Examples 1, 8 and 10 in Table 2), 3 mol% (PES2 in Table 1 and Examples 2 and 6 of Table 2), 5 mol% (PES3, PES4, PES5 of Table 1 and Examples 3, 4, 5 and 7 of Table 2), and 3.5 mol% (PES6 of Table 1 and Example 9 of Table 2).

The Examiner has not provided any technical reason or justification to support an assertion that the exemplification in the specification with the preferred metal salt of 5-

sulfoisophthalic acid would not be expected by one of ordinary skill to be predictive of aromatic dicarboxylic acid having a metal sulfonate group contained in the polybasic carboxylic acid, as claimed.

The applicants note in this regard that the Examiner has cited to U.S. Patent No. 6,387,108 (referred to as document D18 herein and below), as teaching sulfonated polymers, and demonstrating that the level of skill in the art of sulfonated polymers is advanced.

One of ordinary skill in the art will appreciate that the applicants were in possession of the claimed invention at the time the application was filed.

The Examiner has asserted that the specification, as filed, allegedly fails to provide an adequate written description of the claimed invention. That is, the Examiner asserts that one of ordinary skill would allegedly not appreciate that the applicants were in possession of the claimed invention at the time the application was filed.

The Examiner has cited In re Wright, 9 USPQ2d 1649 (Fed Cir 1989) in support. See page 3 of the Office Action of October 9, 2007.

Interestingly, the Wright court found that the applicants in question adequately described their claimed invention and the court reversed the written description rejection of the Patent Office Board of Appeals.

Specifically, Judge Rich, in writing for the court, quoted from the PTO Solicitor's brief in noting the following:

the inquiry is whether [an] artisan is made aware from the description in appellant's specification that he regarded as part of his invention -- and so described in the specification -- the concept that the microcapsules are "not permanently fixed."

And again:

The present case does not involve a breadth-description matter; the present case involves a definition-description matter, i.e., whether the specification describes the invention in a way to justify the manner in which it is now claimed. 9 USPQ at 1650

In reversing the Board, the Wright court noted that the specification as a whole must be considered and that

“the claimed subject matter need not be described in haec verba in the specification in order for that specification to satisfy the description requirement.” 9 USPQ2d at 1651

The fact, therefore, that the exact words in question in the In re Wright , “not permanently fixed”, were not found in the specification was not considered important by the Wright court.

From the wording of the examiner's rejection it would seem that he did not know that; at least he wanted to be shown an “unequivocal teaching” that the microcapsules are not permanently fixed. The board, on the other hand, launched into a discussion of whether the meaning of the words is clear and whether the specification contains “guidelines” as to what they mean. It felt the words were open to “different interpretation”, which goes to the scope of the phrase rather than support for it. We deem this to be an irrelevant inquiry. Id.

The Wright court found the words in question however to be common, garden variety words known to every English-speaking person. The Wright court, after reading the specification themselves, in the light of which all that the claims say must be construed, and considering it against the background of the prior art partially shown by the references relied on were fully convinced that the process of the claims, containing the words “not permanently fixed”, was described in the specification.

The present applicants similarly believe that the present application, taken as a whole, will be appreciated by one of ordinary skill in the art to teach the claimed invention.

Withdrawal of the Section 112, first paragraph "written description", rejection is requested.

The claims are submitted to be patentable over the art of record and consideration of the following in this regard is requested.

The following list of art has been cited in the rejections of the claims contained in the Office Action of October 9, 2007, and the documents will be referred to herein by the document numbers, or "D" numbers, shown, consistent with the applicants remarks of June 25, 2007:

D4 – U.S. Patent No. 4,625,220 (Nagashima);

D5 – U.S. Patent No. 4,723,129 (Endo);

D6 – U.S. Patent No. 6,715,869 (Reem);

D14 – U.S. Patent No. 5,464,883 (Sharma);

D15 – U.S. Patent No. 5,922,118 (Johnson);

D16 – U.S. Patent No. 6,454,402 (Koitarbashi);

D17 - U.S. Patent No. 5,977,209 (Breton);

D18 - U.S. Patent No. 6,384,108 (Breton);

D19 - U.S. Patent No. 6,533,408 (Erdtmann); and

D20 - US Patent Application Publication No. 2003/0018100 (Foucher).

The following art rejections are understood to be asserted in the Office Action of October 9, 2007 (maintaining the numbering of the rejections restated in the Remarks of the AMENDMENT AFTER FINAL REJECTION filed June 25, 2007):

(5) Claims 1, 4, 9-10, 15-17, 22-23 and 26-30 have been rejected as allegedly having been obvious over the combination of D17, D18, D4 and D5 (stated in §7. of the Office Action dated October 9, 2007);

(6) Claim 5 has been rejected as allegedly having been obvious over the combination of D17, D18, D4, D5 and D14 (stated in §8. of the Office Action dated October 9, 2007);

(7) Claims 7 and 8 have been rejected as allegedly having been obvious over the combination of D17, D18, D4, D5 and D15 (stated in §9. of the Office Action dated October 9, 2007);

(8) Claims 12-14 have been rejected as allegedly having been obvious over the combination of D17, D18, D4, D5 and D19 (stated in §10. of the Office Action dated October 9, 2007);

(9) Claims 1, 4, 9-10, 15-16 and 26-30 have been rejected as allegedly having been obvious over the combination of D20 and D16 (stated in §12. of the Office Action dated October 9, 2007);

(10) Claim 5 has been rejected as allegedly having been obvious in view of D20, D16 and D14 (stated in §13. of the Office Action dated October 9, 2007);

(11) Claims 7 and 8 have been rejected as allegedly having been obvious in view of D20, D16 and D15 (stated in §14. of the Office Action dated October 9, 2007);

(12) Claims 12-14 have been rejected as allegedly having been obvious over D20, D16 and D19 (stated in §15. of the Office Action dated October 9, 2007);

(13) Claims 18-21 and 24-25 have been rejected as allegedly having been obvious over D6 and D18 (stated in §11. of the Office Action dated October 9, 2007);
and

(14) Claims 18-21 and 24-25 have been rejected as allegedly having been obvious over D6 and D20 (stated in §11. of the Office Action dated October 9, 2007).

Rejections (5)-(8) and (13)

Each of these rejections rely on D17 and D18.

The claims are submitted to be patentable over the cited combinations of references with D17 and/or D18 and consideration of the following in this regard is requested.

The presently claimed invention requires a polyester resin containing a polybasic carboxylic acid ingredient and a polyhydric alcohol ingredient, the polybasic carboxylic acid ingredient containing three or more dicarboxylic acids which include at least aromatic dicarboxylic acid having a metal sulfonate group and aromatic dicarboxylic acid not having a metal sulfonate group, wherein a ratio of the aromatic dicarboxylic acid having a metal sulfonate group contained in the polybasic carboxylic acid ingredient is 0.5 mol % or more and 4 mol % or less.

The Examiner is understood to believe that D18, for example, discloses sulfonated polyester obtained from 50 mol % diol. such as alkylene glycol and 50 mol % diester which comprises 2.5-15 mol % sulfonated aromatic moiety, i.e., aromatic

dicarboxylic acid having metal sulfonate group, and 35-47.5 mol % diester such as that disclosed at col. 4. lines 48-61.

The applicants believe however, that the Examiner's interpretation of the reference(s) is not correct.

Specifically, the applicants believe that column 4, lines 48-61 of D18, for example, disclose that the emulsifiable polymer resin comprises about 50 mol % of a diol and about 50 mol % of a diester, and that the diester component in the emulsifiable polymer resin is preferably a mixture of about 2.5-15 mol % of a sulfonated aromatic moiety, and the remaining portion is about 35-47.5 mol % of a diester such as dimethyl terephthalate.

The value of 2.5-15 mol % described in this reference however is a ratio to the entire polymer resin, but not to the diester component. This interpretation is supported by the fact that $(2.5\% + 47.5\%)$ and $(15\% + 35\%)$ are both equal to 50 %, which value coincides with the ratio of the diester component to the polymer resin.

The value in the recitation of claim 1 of the present application however is not a ratio to the polyester resin, but rather a ratio to the polybasic carboxylic acid ingredient contained in the polyester resin.

The ratio of the sulfonated aromatic moiety to the diester component in D18, for example, is calculated to be 5-30 mol %, taking into account the ratio (50 %) of the diester component to the entire polymer resin.

Thus, the range from 0.5 mol % to about 4 mol % of the present claims does not overlap with the range of D18, for example, nor would the same have been obvious therefrom.

The secondary references fail to cure this deficiency in, for example, D18.

The Examiner has asserted in the Office Action of October 9, 2007 that the difference between the range of 5-30 mol % of D18 and the claimed 0.5 mol % to about 4 mol % of the claims “are so close to each other that the fact pattern is similar to the one in *In re Woodruff*, ...[16] USPQ2d 1934 (Fed. Cir. 1990) or *Titanium Metals Corp. of America v. Banner*, ... 227 USPQ 773 (Fed. Cir. 1985).” See page 7 of the Office Action dated October 9, 2007.

The applicants note, with due respect, that the issue before the court in Woodruff was unrelated to whether a numerical range of the cited art would have made a different numerical range obvious, as an issue in the present application.

Specifically, the Woodruff court considered whether a claimed method of inhibiting growth of fungi on fresh leafy and head vegetables comprising maintaining the same in a “modified gaseous atmosphere” which included specific ranges of CO₂, O₂, CO and N₂ at a specified temperature range, would have been obvious in view of a reference (i.e., McGill) teaching storing fresh leafy and head vegetables in an atmosphere which substantially overlapped with the ranges in composition and temperature of the Woodruff claims.

The Woodruff court noted the following in comparing the claims with the art:

Therefore, there are two differences between the claimed invention and the prior art: one, the slightly different ranges of carbon monoxide concentration used in the *modified* atmosphere; and two, the newly disclosed benefit of inhibiting the growth of fungi. We are of the opinion that these differences do not render the claimed process patentable. 16 USPQ 1936

In sustaining the rejection, the Woodruff court noted the following:

It is a general rule that merely discovering and claiming a new benefit of an old process cannot render the process again patentable. *Verdegaal Bros., Inc. v. Union Oil Co. of Calif.*, 814 F.2d 628, 632-33, 2 USPQ2d 1051, 1054 (Fed.Cir.), *cert. denied*, 484 U.S. 827 (1987); *Bird Provision Co. v. Owens Country Sausage, Inc.*, 568 F.2d 369, 375, 197 USPQ 134, 139 (5th Cir. 1978). While the processes encompassed by the claims are not entirely old, the rule is applicable here to the extent that the claims and the prior art overlap. Id.

As noted above, and as appears to be appreciated by the Examiner, the rejected claims of the present application do not require a range which overlaps with the cited art such that the analysis and holding of Woodruff is not believed to be supportive of the Examiner's rejection.

In a similar manner, the applicants believe the Examiner's reliance on Titanium Metals Corp. of America v. Banner, is misplaced. Specifically, Titanium Metals arose from an appeal by the Patent Office of a District Court decision in a Section 145 Action, after the applicants (i.e., Covington et al.) were unsuccessful in appealing a final rejection to the Patent Office Board of Appeal. The Board of Appeals maintained the Examiner's rejection of the claims reciting ranges of Ti, Ni and Mo in a Ti-Ni-Mo alloy as being anticipated by a reference teaching a range of ratios for the components of the alloy. The Titanium Metals court characterizes the applicants arguments at the Board as attempting to base novelty of the claimed alloy on a finding of a new property (i.e., corrosion resistance) where the cited art (i.e., "the Russian article") only discloses strength and ductility. See 227 USPQ 775. The Board further sustained the rejection of a dependent claim (i.e., claim 3) reciting specific amounts of Ni and Mo within the broad range of the independent claim as being obvious over the Russian reference.

The Titanium Metals court reversed the District Court decision on novelty relating to the claims reciting ranges of Ti, Ni and Mo - finding that the cited Russian reference taught amounts "squarely within the ranges" of the claims. See 227 USPQ 778.

With regard to the obviousness rejection of the claim reciting specific amounts within the anticipated ranges, the Titanium Metals court concluded as follows:

Little more need be said in support of the examiner's rejection of claim 3, *affirmed* by the board, on the ground that its more specific subject matter would have been obvious at the time the invention was made from the knowledge disclosed in the reference. See 227 USPQ 779.

Unlike the facts considered by the titanium Metals court, the presently claimed range is outside the teaching, and would not have been obvious in view of the teaching, of the cited art.

Withdrawal of rejections (5)-(8) and (13) is requested.

Rejections (9)-(12) and (14)

Each of these rejections rely on D20.

The claims are submitted to be patentable over the cited combinations of references with D20 and consideration of the following in this regard is requested.

The applicants previously noted that D20 teaches a resin with a ratio of the aromatic dicarboxylic acid having a metal sulfonate group contained in the polybasic carboxylic acid ingredient is 42.9 mol % which is not included in the range of the claimed invention, i.e., 0.5 mol % to 8 mol %. The Examiner is understood to have questioned the applicants calculation in this regard and the Examiner has provided her own calculation on pages 9-10 of the Office Action dated March 23, 2007 to allegedly demonstrate that reference D20 teaches a resin meeting the claimed requirement.

The applicants again submit however that D20 fails to teach or suggest the claimed ratio. The combination of cited art fails to cure this deficiency.

Specifically, the applicants submit that a ratio of 42.9 mol % of the aromatic dicarboxylic acid having a metal sulfonate group contained in the polybasic carboxylic acid is described, for example in paragraph [0060] of D20. In this paragraph, it is described that the resin is comprised of, on a mole percent basis, approximately 0.415 of terephthalate, 0.05 of aspartic acid 0.35 of sodium sulfoisophthalate, 0.375 of 1,2-propanediol, 0.025 of diethylene glycol, and 0.100 of dipropylene glycol. Dicarboxylic acids in this resin are terephthalate, aspartic acid and sodium sulfoisophthalate, and a total amount of these dicarboxylic acids is 0.815 mol % ($0.415+0.05+0.35$). Thus, the ratio of sodium sulfoisophthalate to the entire dicarboxylic acids is 0.429 ($0.35/0.815$), as previously presented.

The Examiner's calculation is understood to be based on the amounts of the starting materials used in the reaction, while the applicants previously-presented value is obtained directly from the product of the reaction, as in the claims.

Generally, chemical reactions do not proceed qualitatively, that is, all of starting materials are not converted into to a target product. Some of the starting materials are converted into byproducts or decomposed during the reaction, and some other may remain unchanged after the reaction. Yield of a reaction depends on conditions employed in the reaction. This is one of possible reasons why the Examiner's value of 7.1 mol % is different from the applicants value of 42.9 mol %.

However, it appears that these two values are so different from each other that there may exist other reasons, which the applicants are unable to explain. There is a

possibility that one or more of the amounts of the starting materials in Foucher are erroneously described. In any event, the applicants believe that the calculation regarding reaction products should be performed based on amounts of the products, not on amounts of starting materials, as far as the amounts of the products are described.

One of ordinary skill in the art would not have been motivated by the cited combination of art to have modified the 42.9 mol % of D20, for example, to produce the presently claimed invention.

Withdrawal of the rejections (9)-(12) and (14) is requested.

The claims are submitted to be in condition for allowance and a Notice to that effect is requested. The Examiner is requested to contact the undersigned in the event anything further is required in this regard.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: /B. J. Sadoff/
 B. J. Sadoff
 Reg. No. 36,663

BJS:
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100